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Tuberculosis
Pa. sch. law briefs

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THE JOURNAL OF SCHOOL HEALTH

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TUBERCULOSIS AS A SCHOOL PROBLEM*

By J. ARTHUR MYERS

The solution of the tuberculosis problem in schools first necessitates consideration of the nature of the disease. There is no scientific proof that tuberculosis is inherited in any sense of the word. Congenital tuberculosis occasionally occurs, but with such rarity that it does not create a problem. Tuberculosis is caused solely by the tubercle bacillus of both the bovine and human types. Contributory causes have been propounded, such as insufficient diet, overwork, nervous tension, scanty wearing apparel and constitution. However, to date we are in possession of no scientific information concerning the role, if any, of such factors. The only well established fact is that the disease is contagious, and the organisms are transmitted from person to person, or animal to person, by direct or indirect contact. The invasion with tubercle bacilli may be within the first hour of post-natal life or at any subsequent time, including the period of senility. Many persons now live long lives without being infected with tubercle bacilli, and their number is rapidly increasing.

Regardless of when tubercle bacilli enter the body or by what portal, they are promptly focalized in various organs, and within a matter of hours tubercle formation begins. At this time the individual has tuberculosis, and he continues to have this disease as long as the tubercle bacilli remain alive. The only difference in the disease at this moment and that present at the time of death from meningitis or consumption is one of degree. Thus, the school child who has recently become a reactor to tuberculin has tuberculosis just as truly as the seventy-five year old man with pulmonary cavitation and tubercle bacilli in the sputum. In the former the disease is at its beginning, while in the latter it has progressed through various stages of its evolution. Not long ago we talked glibly about the difference between tuberculous infection and tuberculous disease. We thought the person who had infection but no disease walked within a charmed circle of safety from

*Read before the Conference on Control of Tuberculosis in a Metropolitan Area sponsored by the Institute of Medicine of Chicago, November 13, 1945.

*I am deeply indebted to Dr. G. J. Drolet for much of the statistical information in this paper.

destructive tuberculosis. Now we know that tuberculous infection is disease; the terms are synonymous.

Tuberculosis develops in the human body in two distinct phases. The primary phase may lead directly into the reinfection phase in a relatively short period of time, or over years or decades. In many persons the reinfection or destructive phase never develops. The response of the tissues to bacilli of the first invasion is not unlike that to many other foreign materials, including inanimate substances of the particulate type, such as silica. The reactions are in no wise specific. However, as the lesions develop, tuberculoprotein is liberated and sensitizes the tissues, including the skin. A period of three to seven weeks elapses before the sensitivity reaches a degree detectable by the usual test. Before sensitivity is established, tuberculoprotein is a relatively harmless substance, but to sensitized tissues it acts as a severe poison. This is not effective to any appreciable extent in primary lesions because the tubercle bacilli are well surrounded by the defense elements of the body before the sensitivity develops.

Primary tuberculosis is an extremely benign disease. The vast majority of persons who have it are not aware of its presence. Its benignity is so characteristic that in the past even physicians who recognized it regarded it as of little or no significance. During the first few weeks of its development the physician has no way of detecting the presence of primary tuberculosis in the living body. As soon as the tissues are sensitized, however, the tuberculin test detects its presence unfailingly. Everyone who reacts characteristically to tuberculin has primary tuberculous lesions in one or more parts of his body.

The primary type of tuberculosis does not produce dependable immunity against subsequent attacks of the reinfection type of disease. Moreover, there is no available artificial immunizing agent that has been proved to protect the human body against either the primary or the reinfection type of tuberculosis.

All persons who have primary tuberculosis (tuberculous infection) are potential cases of both the acute and chronic reinfection forms of the disease because their tissues are sensitized, and therefore fresh implantations of tubercle bacilli of exogenous or endogenous origin result in specific reactions, often causing necrosis, illness, contagion, and even death. Acute forms of the reinfection type, particularly meningitis, generalized miliary disease and tuberculous pneumonia, are not uncommon among children with primary tuberculosis, especially during the first three or four years of life. A small percentage of children with primary tuberculosis

develop extrathoracic, chronic lesions, particularly in the bones and joints. The chronic reinfection type of pulmonary tuberculosis begins to make its appearance among the individuals with primary disease about the age of twelve to fourteen years, and increases in frequency throughout the span of life.

Pre-X-ray Tuberculosis

The vast majority of tuberculous lesions among preschool children, students and personnel of schools is in the pre-x-ray stage. They are so small or of such consistency, or so located that they do not cast shadows visible on x-ray films. When attention was called to the fact that there is more x-ray tuberculosis among persons beyond the age of twenty-five years than among children and students, there was a tendency to abandon whatever work was being done among the latter groups and spend all available money, time and effort on adult groups. This situation reminds one of the gold rush of '49, when large numbers of persons engaged in fundamental and profitable activities abandoned them and hurried away to the land of gold, supposedly to become rich in a few months. To seek gross, clinical tuberculosis among certain groups of adults is laudable and this activity should be greatly increased and intensified. Indeed, this is an excellent method of protecting children. Nevertheless, this is not a substitute for a tuberculosis program among children and is no reason for abandoning such activities.

Wherever tuberculosis work among children and students has been abandoned, sight was lost of the fact that much of the x-ray tuberculosis found among adults was in no small degree due to lack of adequate work among them while they were of school age. Moreover, consideration was not given to the fact that neglect of children and students of today will result in much x-ray tuberculosis among the adults of tomorrow.

X-ray inspection of the chest is of little value in the examination for tuberculosis among children up to the age of twelve or fourteen years. In those who have recently been infected, it fails to show any evidence of the lesions in 90 to 95 per cent. When infections have been present for several years, deposits of calcium may become sufficiently large in the lesions of primary complexes to cast shadows on the x-ray films in 20 to 30 per cent of the cases. In the remaining 70 to 80 per cent, the x-ray fails. The deposition of calcium is not a specific process for any disease. In fact, in some areas of this country calcium deposits in the lungs are caused by nontuberculous conditions more frequently than by tuberculosis.

Therefore, to condemn the tuberculin test because many nonreactors present evidence of calcium deposits in the chest is unwarranted. The x-ray is helpful among high school, college and personnel tuberculin reactors in locating gross lesions of the reinfection type often before they cause symptoms or abnormal signs by the conventional examination. In such cases, however, x-ray shadows are not pathognomonic; therefore, other phases of the examination are necessary to determine the etiology of any lesion which casts a shadow.

Functions of the Tuberculin Test

The tuberculin test is our most potent weapon against tuberculosis in the schools. It promptly and accurately provides all necessary information to determine the presence or absence of pre-x-ray tuberculosis among students and members of personnel.

The tuberculin test is our only satisfactory criterion of the effectiveness of a tuberculosis control program. The combination of all other phases of the examination is insignificant compared with this test. In the State of Washington, between 1931 and 1943 Cox tested 45,126 grade school and junior high school students. During the first ten years of this work an average of 9.1 per cent of these students were found to have primary tuberculosis; whereas, from May 1942 to May 1943, only 3.68 per cent had this disease. Among 59,697 senior high school students tested, 11.67 per cent were found with primary tuberculosis during the first ten years of his studies; whereas, in the last year, 1942-1943, this condition existed in only 5.6 per cent.

Among grade school students in carefully selected schools tested in 1926, Harrington reported 47.3 per cent with primary tuberculosis; whereas, in 1944 in the same schools, only 7.7 per cent were found to have this disease. In ten village schools with an enrollment of approximately 2,000, between 1930 and 1935 Jordan found that 14.3 per cent of the students had primary tuberculosis. In the same schools in 1944, not a single student had this type of disease. Jordan's accomplishment is the ultimate goal of all tuberculosis work among students.

In Du Page County, Illinois, Webb tested 20,000 school children from 1938 to 1944 and noted a progressive drop in reactors from 19.1 per cent to 8.7 per cent. In another group of 12,000 high school students tested in 1944, only 10.8 per cent reacted and twelve clinical cases were found. The testing of high school students in Syracuse, New York in 1934 and 1935 revealed 34.7 per cent with primary tuberculosis; whereas in 1944 and 1945 the

percentage was 6.2. In the City of Chicago the incidence of primary tuberculosis among high school students dropped from 33 to 21 per cent in the past twelve years.

During the school year 1932-33 a large volume of tuberculin testing in the colleges and universities of the United States revealed that 35 per cent of the students had primary tuberculosis; whereas in the school year 1943-44, this percentage was only 18.6.

There is no way of obtaining this important information except by the tuberculin test. Therefore, any school that attempts a tuberculosis control program must first ascertain the tuberculosis situation by administering the tuberculin test to students of all ages and to all members of the personnel. Periodic tuberculin testing thereafter will determine with accuracy the effectiveness of the program.

Tuberculin—X-ray Controversy

An unfortunate controversy has been waged as to whether the tuberculin test or the x-ray is better in controlling tuberculosis. To the student of tuberculosis this is absurd, as each of these procedures has its own distinct role. Neither is a substitute for the other. The tuberculin test finds those with living tubercle bacilli in their bodies and therefore with primary lesions, while the X-ray is a total failure in this respect. Among the reactors, the X-ray finds those with gross, reinfection type lesions in the 75 per cent of the lungs visualized before any other procedure locates them. For this purpose the tuberculin test is of no value, whatsoever, since sensitivity of the tissues apparently is not changed when persons with primary lesions develop those of the reinfection type.

With these facts in mind, it is obvious that in the schools one may encounter tuberculosis in all of its evolutionary stages, from the primary type in those of all ages to the reinfection type in both acute and chronic forms in those of all ages, and particularly chronic pulmonary disease among high school students and personnel. The seriousness of the tuberculosis problem in schools was so recognized by Dr. Charles H. Keene in 1934, that as president of the American School Health Association he appointed a committee to study the problem and devise methods for its solution.

Preschool Children

It is important to know the tuberculosis status of each child who enters a school at the age of approximately five years. Therefore, every school system should manifest an interest in the pre-

school children of the area it serves in order to insure that the smallest possible number of those who enter have primary tuberculosis. The census of 1940 revealed that there were 10,541,524 preschool children in the United States. The bodies of these children are free from tubercle bacilli at birth, and they can continue to enjoy that freedom if they are adequately protected against contagion. This is not an impossibility. Indeed, it has already been accomplished for the vast majority of preschool children in this country.

Mortality rates from acute, rapidly fatal forms of tuberculosis among young children indicate that much has been accomplished. For example, in one state, Boynton called attention to a mortality rate of 130 among infants under one year of age from 1915 to 1919, but it was only 9 from 1940 to 1944. This is a decrease of 93 per cent. In fact, in the entire United States for the years 1938 to 1942, only 524 infants under one year died annually while among children from one to four years, only 1134 died each year.

In one city of approximately one half million population and in many large rural areas the infection attack rate is now only one-third of one per cent per year; thus only 2 per cent are infected by the age of six years. In sizable areas of the United States one cannot find a single preschool child who has been infected with tubercle bacilli. With adequate effort this situation can obtain everywhere.

Grade School Children

Each child who enters schools as a tuberculin reactor has tuberculosis. Likewise, every child who becomes a reactor while in school has this disease. Here lies one of our great opportunities in tuberculosis control, since every tuberculin reactor has been in contact with one or more contagious cases of tuberculosis among his adult associates. Seeking the responsible individuals may be extremely fruitful when it is properly done. The prevention of further exposure of the infected school child may be of great importance in the maintenance of his future health. The 1940 census revealed that there were 22,430,557 children in the United States between the ages of five and fourteen years, inclusive.

Much has already been accomplished in controlling tuberculosis among children of this age period. The tuberculosis mortality rate among children from birth to fourteen years has markedly decreased during this century. In one state, Boynton found a rate of 34.1 from 1915 to 1919, but only 3.9 from 1940 to 1944. This represents a decrease of 88 per cent from 1915 to 1944. Indeed, in this state there were 260 deaths from tuberculosis among chil-

dren under fifteen years in 1915, and only 26 in 1944. Drolet has pointed out that in New York City in 1915 the actual number of deaths from tuberculosis among children under fifteen years was 1,200 but in 1940 it was only 110. Throughout the entire nation the average annual number of deaths among children from five to fourteen years was 1,288 during the years 1938-1942.

On the basis of actual testing that has been reported, it is probable that not more than 10 percent of the children of this age period have been infected. Thus, in only approximately two and a quarter million pre-high school students would it be necessary to seek the source of infection.

There is no phase of the examination that will detect with certainty the presence of tuberculosis in this two and one quarter million children except the tuberculin test. To make x-ray film inspections of the chests of the entire 22,430,557 would yield nothing in the chests of the nonreactors, and evidence of small lesions which might be due to tuberculosis in only approximately 20 per cent of the reactors. (In the remainder of the reactors the disease is in the pre-x-ray stage.) Thus, of the two and one quarter million children with primary tuberculosis, less than one half million would show any evidence by x-ray even suggesting the presence of primary tuberculosis. Moreover, the evidence found by this method would not be conclusive in any sense of the word, as it could just as well be evidence of a variety of nontuberculous conditions, including histoplasmosis and coccidioidomycosis.

Between 1921 and 1945 we were engaged in a study of tuberculosis among children when the tuberculin test was administered to several thousand individuals, and for the first ten years every child, regardless of the reaction, had stereoscopic x-ray film inspection of the chest. At the end of ten years of this study, analysis of the data revealed that stereoscopic films had no advantage over single films. Therefore, it was recommended that in the future stereoscopic films be discontinued except in rare instances when there might be some special indication.

This analysis also revealed that there had never been found any evidence of significant tuberculosis by x-ray film inspections of the chests of nonreactors to tuberculin, and therefore it was decided that henceforth, x-ray inspections of the chests of nonreactors would be discontinued as far as the search for tuberculosis was concerned.

Another revelation of extreme importance to us was that only a small percentage of even the tuberculin reactors presented x-ray evidence of the possible location of their primary lesions. More-

over, lesions which might be due to the reinfection type of tuberculosis were seen with great rarity before the age of twelve to fourteen years. Therefore, we strongly recommended that x-ray film inspection of the chest, even of tuberculin reactors, be discontinued among children up to this age. These observations involved a large enough group of children and extended over a sufficiently long period of time that we were convinced the above three conclusions were justified. Moreover, the subsequent years of observation have not modified these deductions.

Every child who reacts to tuberculin has primary tuberculous lesions containing tubercle bacilli. These living organisms are the progeny of those previously admitted to his body from an adult who had contagious tuberculosis. Moreover, every such child is a potential case of acute reinfection type of tuberculosis, chronic, extrathoracic forms of the disease at any time, and chronic pulmonary tuberculosis at some time during adulthood. To neglect or refuse to recognize the problem of tuberculosis among grade school children removes the tuberculosis program in any community from the first class and places it in one of low rating.

High School Students

In 1940 there were 12,333,523 persons between the ages of fifteen and nineteen years, who, for the most part, were in the high school age period. Those who enter high school as tuberculin reactors, as well as those who become so during this age period, have been exposed to contagious cases of tuberculosis and also have primary lesions containing living tubercle bacilli in their bodies. They should be dealt with in precisely the same way as grade school children, with the exception that they are now in the age period when the reinfection chronic type of pulmonary tuberculosis begins to make its appearance, and therefore every reactor should be carefully examined at least annually for the appearance of lesions of this type.

Between 1938 and 1942 the average annual number of deaths among persons in this age period throughout the United States was 3,373. Thus, during these five years of young adult life a larger number of deaths occurred among the 12,333,523 individuals represented than among the 32,972,081 children under fifteen years. Despite this fact, there has been a marked improvement in the tuberculosis situation among those of fifteen to nineteen years during this century. For example, in 1910 there were 9,063,603 individuals in this age period and in 1920 there were 9,430,556, and the number of deaths was 12,172 in 1910, and 9,327 in 1920.

The exact percentage of high school girls and boys who have primary tuberculosis is not known for the country as a whole. However, reports originating in various parts show a variation from approximately 3 to about 23 per cent. A fair estimate for the entire country is between 12 and 15 per cent. Thus, approximately one and three quarters million of the individuals between fifteen and nineteen years have the primary type of tuberculosis. Our studies in this age group have shown the futility of making x-ray film inspection or other phases of the examination of those who do not react to tuberculin. Such a procedure is a waste of time, effort and material as far as tuberculosis is concerned. On the other hand, these studies have proved the imperativeness of periodically making x-ray film inspections of the chest and other phases of a complete examination of every tuberculin reactor in this age period. It is true that only a small percentage of high school reactors develop chronic reinfection type of the disease in the contagious stage, but all such cases are found among the reactors. Even this small percentage is worth the required effort because the disease is contagious. To allow one such case to exist in a high school may result in the establishment of the first infection type of tuberculosis in a high percentage of his fellow students. Jordan has reported several such instances. Adequate examination of all high school students must be compulsory. School boards have the authority to make it so. The transfer of all tuberculosis activity from high school to industry or any other population group is extremely bad practice and gives the tuberculosis activities in the community a low rating.

College Students

With the advent of the college age, approximately nineteen or twenty years, tuberculosis still slowly gains momentum. The incidence of primary disease slightly increases. The reinfection type of chronic pulmonary tuberculosis occurs a little more often than it does among high school students but does not attain the height of its destructive power for more than a decade after college days are over. The testing of large numbers of college students in institutions in various parts of the nation during the school year 1943-44 revealed that only 18.6 per cent had primary tuberculosis. In ten colleges in the mid and northwest less than 10 per cent of the students were found to have this disease. The reactors in this age period should be managed in the same way as during the high school age.

School Personnel

The word, personnel, is used here to include administrators, teachers, clerical workers, cooks, engineers, janitors, bus drivers, and all others who take any part in the operation of schools. Such persons range in age from early adulthood to sixty-five or seventy years. Chronic reinfection type of tuberculosis increases among adults with the passing of the decades of life. One would expect, therefore, to find a higher percentage with tuberculosis in this stage of its evolution among the members of school personnel than among students.

During the school year 1941-42, there were employed on the instructional staffs in public day schools in the United States 898,001 persons, of whom 858,888 were teachers, while the others were supervisors and principals. The same year, among thirty-two states and the District of Columbia reporting, there were 101,134 full time and 25,299 part time employees in health, attendance, transportation and custodial services. Thus, 1,024,434 persons were employed. This does not include individuals engaged in similar classifications in parochial and private schools.

Wherever surveys have been adequately made, from 1 to 1.5 per cent of teachers have been found to have clinical tuberculosis, and from 30 to 60 per cent had primary disease as manifested by the tuberculin reaction. Thus, a significant tuberculosis problem exists among the personnel of our schools which should be solved. In many places school boards now require adequate pre-employment examinations for this disease and periodic examinations throughout the period of employment of all members of personnel. It seems unlikely that those responsible for the schools of this country will much longer allow contagious cases of tuberculosis to be engaged in the activities of the schools.

Our greatest educational opportunity in tuberculosis control lies among the 45,305,604 children, of whom 34,700,000 are grade and high school students, in addition to a large number of college students, together with more than 1,000,000 employees of schools. This is more than one-third of our entire population of 131,669,275.

Certification of Schools

The Committee on Tuberculosis of the American School Health Association is of the opinion that every school in this country can create an environment free from contagious tuberculosis. There is now a subcommittee of this organization in every state and in some of our large cities. The members of these subcommittees know the magnitude of the problem and the best solution in the

respective states. The problem differs widely throughout the nation and consequently, the methods of solving it must vary.

The most promising activity from the standpoint of stimulating interest and work consists of certifying schools which meet certain requirements with reference to tuberculosis control measures. It is anticipated that the requirements or qualifications for certification will be determined in each state by its subcommittee on tuberculosis. Already in one state certification of schools has begun, and the members of the subcommittee declare that in many years no project has been instituted that has stimulated so much interest and activity in tuberculosis control in the schools.

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THE PREVENTION OF TUBERCULOSIS IN THE LOS ANGELES CITY SCHOOLS

VERA C. WAEGELE, M. D.

LOS ANGELES CITY SCHOOL SYSTEM

Health Service Section
Educational Unit for the Prevention of Tuberculosis

During the year 1945 local records of Los Angeles show that though the death rate from tuberculosis has declined, the number of reported cases of tuberculosis has risen. The decline of the death rate is rightly a cause for rejoicing. The increase in reported cases in the community need not necessarily be a cause of worry. There may be, of course, a true increase of tuberculosis, due to the crowded conditions and the strains of war. These conditions are paralleled in every other warring country. It may be, however, that this increase in reported cases reflects our own efforts to find early cases by testing student and industrial groups. Tuberculosis is not conquered. Scientists must continue their search for methods to save patients afflicted. Those of us in the public health fields must direct our efforts to the finding of new cases, among the apparently healthy, before the disease has progressed to a stage where cure would not be so difficult and expensive.

For a number of years the students in the high schools of Los Angeles have had periodic programs of tuberculosis education and case-finding. These programs were first organized and carried out by the Health Service Section with the assistance of the Federal Government through the WPA. Later they were assured by the Los Angeles Tuberculosis and Health Association, who demonstrated their well tried methods in the schools.

When this organization found its work greatly increased in the field of industry, the tuberculosis prevention work was taken over by the Board of Education. The schools owe this continuation to the interest and cooperation of the Los Angeles City Board of Education, the Tenth District Parent-Teacher Association and the Advisory Board of the Los Angeles County Tuberculosis and Health Association. At the present time the Board of Education furnishes the personnel, two part time chest specialists, six nurses, clerks, and an X-ray technician. The Tuberculosis Association furnishes the services of a doctor to administer the tuberculin test and the printed material together with films needed in the educational program. The Parent-Teacher Association furnishes headquarters in their clinic building, the X-ray equipment, and many films for indigent children. Working together, these organizations planned

a truly operative program to prevent tuberculosis in the Los Angeles City Schools.

In 1944 the program was given in the City College, in ten senior high schools, in seven junior highs, and in four elementary schools which are located in high incidence areas. These schools had a total enrollment of 28,629 pupils. All of these pupils received information about tuberculosis, had an opportunity of attending lectures and motion picture films, and were given printed material on the subject. Many schools incorporated the material into their own health program, and activated it by special demonstrations, auditorium skits, and articles in their own school papers.

After the preliminary education about tuberculosis, consent cards were sent home to the parents, and most of them were returned with a signed "Yes". The percentage of consents varied markedly in different schools. It is interesting to note that the percent of consents was low among those who probably most needed the test — the students in development and special schools for delinquent. All protests received came from this group. For example, there was a note from the mother of a boy under court care for stealing automobiles: "Don't want Johnny to be exposed to no more propaganda about tuberculosis". We found that a higher percentage of consents came from junior rather than senior high schools, and the junior high schedule allowed more time for the educational aspects of the program. In the poorer economic areas, where health is an outstanding program, the students, urged on by their teachers, took full advantage of the opportunity of the tuberculin test.

In order to stimulate interest in the project as a unified school effort, each school was notified of the number of consent cards the student returned, although this included some students who had recent tuberculin tests and chest examinations by city clinics, or private doctors, and did not need tests at school. The final results include only those who actually had the test or X-ray in the school

In the past three years the number of students who have been tested, through the consent of their parents, has risen from 54.8% to 79%, which is strongly indicative of the increased interest in the prevention program.

The Mantoux tuberculin test, with purified protein derivative, was used in a dosage of .0025 mgs. In Los Angeles, in the year 1944-45, 14.1 percent of the students tested, or 3,145, had positive tuberculin tests. This figure includes those schools with the low figure of 6% (a junior high in a good economic area) and the high

figure of 44% (a special school for delinquent girls). In general, the schools tested were located in areas of medium to low economic status and had enrollments of children from many races. Efforts were made to obtain X-rays of every child with a positive Mantoux test by the use of a portable X-ray machine, taking 14″ x 17″, or 11″ x 14″ films. These were read by a chest specialist who requested clinical examination and further laboratory work as needed. The follow-up, with the aid of the nurses and attendance machinery of the school system, was very successful.

Out of the number of students X-rayed in 1944-45, 89 were found to have significant tuberculosis, of whom 52 were active cases. In addition, 385 cases were carried under observation, as potential cases of active tuberculosis, with repeated examinations and specially arranged programs.

Why should we seek tuberculosis among the student groups? This question is often asked, both by laymen and by specialists in the field of tuberculosis case-finding. No one, of course, questions the desirability of finding early cases, and educating all the people about tuberculosis. The question concerns the economy of investing expensive case-finding efforts in a group where the actual number of cases found will be low in proportion to those that might be found in some other group, as in hospital entrants or industrial workers. It is true that the Board of Education would not be justified in offering a tuberculosis testing program on a case-finding basis alone. It must have, as a major objective, education about tuberculosis, presented in such a way that it will serve as a true program for the prevention of tuberculosis. For a number of reasons this can be done effectively in the junior and senior high schools.

In the first place, it is relatively easy to adapt educational facilities and skills already well developed in the high schools to the teaching of health or any aspect of it. The information on tuberculosis may be incorporated into the regular subjects as science, social studies, physical hygiene, or be given as an intensified and separate program. To combine the two methods is most effective and is carried out by most schools. There is considerable variation in the manner in which the tuberculosis information is utilized by the schools. In a very few the attitude of "case-finding" still persists among the faculty, but this attitude is changing rapidly to one of acceptance of the material offered in the tuberculosis program as a stimulating addition to standard subjects. Teachers, who make a life work of inculcating new ideas into sometime reluctant students, can use their art most effectively in

education that involves tuberculosis information. It is important that this program be discussed with the faculty and their full cooperation be obtained.

By offering tuberculosis prevention education in the schools, one has an opportunity to teach all the people, not merely those adults who might be interested in the education offered by voluntary agencies. Some of the students, of course, will promptly forget all they are told, but the large majority will carry over much of the information their schools have offered, especially if they take part in a program in the junior high, and then again two or three years later in the senior high school. Moreover, they will carry this information home to their parents. Through assistance of the Tuberculosis Association and the local health authorities, much can be done to foster a local health campaign against the disease. This has been done successfully in Los Angeles, in certain sections of the city during the past few years. There are unique educational values, however, in a school educational program for the prevention of tuberculosis. Parents' and teachers' organizations and the local papers will carry information which is centered about the school in a way that would not be done for programs of hospital or industrial testing.

Another advantage of a school tuberculosis prevention campaign is a sense of public health responsibility which it may stimulate in the pupils. Students of high school age have a strong group consciousness, and are receptive of information concerning public health problems. Here, as in no other group, we may sow the seeds of social consciousness, of concern about public health and welfare. Here, in teaching by various methods about tuberculosis, we have a colorful and practical demonstration of the need for united human effort to help our country to a better future.

Probably the most effective aspect of the program for education about tuberculosis is its emphasis on the fundamentals of personal health habits, cleanliness, adequate rest, and balanced diet. When a student's own health condition and the X-ray findings are discussed with him by the conference nurse and pointed up by the presence of a positive tuberculin test on his own arm, the whole matter is far more likely to impress him than reading a few lines about it in a book.

Education in tuberculosis prevention as in any other subject bears fruit slowly. We shall probably never be able to collect statistics which will accurately reflect the impression we have made on our high school students. Frequently in the course of the work we are encouraged by having some older boy or girl come to school

and request the services of this field for their younger brothers and sisters because it has been of some help to them. Probably many minimal cases of tuberculosis have been diagnosed because the young adult remembered advice given to him in school and because of it sought early care. Though we can not measure the seeming results of the education as given in our high schools, we do know it goes out in concentric waves just as it does from a stone dropped into water.

Keeping in mind that education of all the students is the major objective in this program of the Los Angeles City Schools, one must consider the second objective, case finding. From the public health standpoint it is of great importance that each of the 52 active cases found in 1944-45 should be separated from their fellow students. It is well recognized that a case of tuberculosis in a young person may point the way to the original source of infection, perhaps sometimes an adult in the home. Through cooperation of the conference nurses with the public health authorities several such adult sources of infection were located. From the financial aspect also it is very important that the active cases be found while in the minimal stage. If one adds the cost of prolonged care to the money that might have been earned had the patient been productive, the cost for each case of tuberculosis that is not found until the advanced stage is, indeed, staggering.

One must also consider that rehabilitation is often delayed and difficult, sometimes impossible, so that the patient who has far advanced tuberculosis is likely to be an invalid for life and a burden to his home and community. When one finds a minimal case, where cure is relatively rapid, where the patient can be returned to an active and useful life, much money has been saved for the taxpayer as well as for the patient himself. To find early cases, even when one adds the cost of case-finding to the cost of case care, may well be good economy for any community.

Tuberculosis prevention work as given in the student group has an advantage that is lacking in most other groups of people. Through the elaborate attendance system it is fairly easy to keep a good surveillance on the students and to obtain them for X-ray and other special examinations as needed. The reports of the tuberculosis testing and X-ray are recorded on confidential health cards kept for each pupil and transferred from school to school with him so that the local doctor in the school is in a better position to guide him in the proper program of school work. For example, students who have been found through the testing program to have suspicious lesions are put under observation from year to

year during their school life and are periodically re-examined by the chest specialist. They have repeated X-rays and laboratory examinations as well as gastric lavage and sedimentation tests. Special school programs are arranged for them with restricted exercise. In some instances home teachers are provided or they are assigned to schools for the handicapped. In spite of excellent care, during 1944-45 fifteen of these students developed tuberculosis in an active form. Medically speaking, this is a very interesting group as among them we see the very earliest type of re-infection or activation that can be observed. Most of this group of 385 students, by means of this guidance, will successfully complete school and graduate with good health and a useful future before them. This is an important part of the prevention of tuberculosis, with a great saving in money for the community, in health for the individual and perhaps even life itself.

Many school requests for the tuberculosis prevention program cannot be met promptly because of limited facilities. It is to be hoped that in the future this work will be incorporated as an integral part of the health teaching of the schools. The material must be so presented that the students will take a wholesome and intelligent interest in it, apply it to their own personal health problems, and see it as a part of their responsibility for the public health.

Because of the large enrollment in the city schools, no school can be tested every year though efforts are made to re-check students in junior college and in the special schools every 18 or 24 months. It is felt that at present it is not advisable to include elementary schools on the tuberculin testing program unless they present some special problem. From both the case-finding and educational aspect the work is more wisely offered in the age group where tuberculosis is a hazard to the life of the student.

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SCHOOL HEALTH SERVICE

By HARRY W. WEEST, M. D.
Secretary of Health
Commonwealth of Pennsylvania

Pennsylvania's present school health law requiring health examinations of school employes and pupils is definitely a public health act. It finances the cost of the medical and dental examination. It does not subsidize any school district. It applies to all children of school age in the Commonwealth regardless of where they attend school, whether public or private, and to those who are home bound. It also provides for the medical examination of all school teachers and school employes. The legislature has seen fit to designate the number of examinations that must be made during the school life of a child, by providing that pupils shall be examined while they are or should be, members of grades one, three, five, seven, nine, and eleven. It also requires that teachers and school employes be examined at least once every two years.

The intent of the Act is to provide a complete medical and dental examination, and it stipulates that these examinations will require the removal of clothing, and that such medical examinations shall not be in excess of four per hour, and dental examinations, not in excess of eight per hour. It also provides that the medical examiner shall be assisted by a registered nurse, and that the dental examiner shall be assisted either by a registered nurse, dental hygienist, or other assistant.

The Act also makes provision for X-rays, electrocardiograms, and other special laboratory tests that may be required by the medical or dental examiner. It places the entire health program under the administration of the superintendents of schools in areas under their supervision. It provides for the development of report forms and the setting up of records in these areas in such a manner as will insure the easy transfer of these records from school to school when pupils move from one area to another. It places responsibility for the financing of this special program on the Commonwealth through the Department of Health, and sets up a standard fee for the medical and dental examiners, in order to insure that a definite standard shall be adhered to.

Under the Act, the health personnel in school districts of the first, second and third class, is appointed by the Board of School Directors for both public and private schools, and approved by the Secretary of Health, the district being reimbursed at the end

of the school year for the number examined, and for the authorized special examinations approved for the district.

In school districts of the fourth class, the responsibility for the appointment of school medical and dental examiners, and necessary nurses in areas where school nurses are not provided by school districts, as well as the payment for their services and for special laboratory examinations, rests with the Department of Health.

Special provision is made in the Act and Regulations outlining procedure in private schools and in Fourth Class School Districts that have already established health services that meet the State requirements, and which allow such schools to recommend to the local school boards or the Secretary of Health, as the case may be, their medical and dental examiners and nurses of their choice for appointment as examiners under the new Health Act.

It must be remembered that this Act does not rescind any act or regulation dealing with health programs as formerly provided for by legislative acts or Department regulations. School districts of the first, second and third class are, therefore, obligated to continue their former activities at the expense of the individual district, and in addition, carry on the new program which is to be financed by the Commonwealth. *This program, it should be noted, provides for medical and dental examination, and makes no provision for a follow up corrective program.* It is not the aim of the Commonwealth to take away from communities their individual responsibilities or to set up any program which tends to destroy the responsibility of the home.

What then will this program do?

1. The type of examination provided for will be complete.

2. For the first time in the history of the Commonwealth, the program has been so set up that the parent is notified of the time of examination and has the opportunity, if they desire, to be present at the time the examinations are made.

3. It also eliminates the doubt that existed in the past as to certain children having conditions which made further examinations desirable. We are particularly interested in that group of children who have symptoms suggestive of tuberculosis, or who are known to have been contacts of open cases of the disease, as well as those children who give a history of having had attacks of Rheumatic Fever.

4. It will be of use in the education of the family concerning the protection provided through immunization and vaccination.

Act No. 425 provides for examination alone. Act No. 426 of the Pennsylvania School Code, however, contains a provision for the establishment of health councils in the various classes of districts, under the supervision of the superintendents of schools. These councils shall be so organized as to include representatives of the *Department of Health, State Medical Society, State Dental Society, Red Cross, Tuberculosis Society, Service Clubs,* and others interested in the welfare of the child. The purpose of this organization is to study the findings of the medical and dental examiners, evaluate the ability of local facilities to administer the problem of follow up, and to stimulate public interest, particularly among parents, as to the responsibility of the home in its relation to the health of the family. In order that this part of the program may be carried out successfully, all school districts of the State will eventually have to provide nursing service. The necessity for such service is already recognized in certain districts, and nurses are already employed by local school boards. The value of such service to any district can easily be proven by studying the results in those districts where this service has been in existence for five or more years.

The relationship between the home and the school is closer and more united where such service exists. It also provides the means of insuring the proper control of communicable disease, and will lessen the incidence of epidemics. This service may be used as the instrument through which preventive measures may be made more effective. It also provides the means of consolidating and coordinating the splendid efforts of all the organizations, and should eliminate the overlapping of activities. It is the best means of insuring better school attendance and a more healthy school environment.

Our health education is becoming more important every day. We must carry to the pupil through this means, the proper presentation of subjects dealing with health habits, nutrition, emotional control, and body mechanics. Physical education can be considered in its infancy although many districts have been providing commendable programs. More attention must be paid to the development of muscle building, posture, alertness, the correction of remediable defects by the use of special exercises, and to provide recreational programs for the large group of children who cannot engage in strenuous athletic competition, but who at the same time, need this sort of an outlet to develop proper attitude in their relation to society as a whole.

Through the close cooperation now existing between the Department of Health and the Department of Public Instruction,

Pennsylvania can look forward to a rapid improvement in the School Health Service. Our objective is to have Pennsylvania rank first among the States of the Nation. This can only be accomplished through the wholehearted support and cooperation of the entire health educational personnel of the State. Harry W. Weest, M. D., Secretary of Health, Commonwealth of Pennsylvania. Reprinted from *Pennsylvania Health*, Jan.-Mar. 1946, page 3.

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Good Health in 1945,—The December, 1945, Statistical Bulletin of the Metropolitan Life Insurance Company might very well have been entitled, "Count your blessings—one by one." It reports, for example, that the maternal death rate in New York City has declined 73 per cent since 1933 and about one-third since 1939 in the United States; that infant mortality in the United States declined to a record low during the war with the greatest relative improvement in the West South Central and Mountain States where the rates are highest; that death rates have continued to decline and the natural increase in population to rise; that the number of marriages which temporarily declined in 1944, rose again in 1945, with the Mountain and Pacific States having had from a 50 to 85 per cent increase each of the four years, beginning with 1942.

The sour note in the statistical picture is a slight increase in fatal accidents due to the increase in motor vehicle accidents following V-J Day, and a slight increase in home accidents (Watch that loose rug!). Occupational fatalities were kept at pre-war levels throughout the war and catastrophic accidents were fewer in 1945 than in 1944. *American Journal of Public Health, March, 1946.*

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School-Health Policies,—Particularly important with respect to these modern school-health policies is the necessity of raising school health and health education to the position of dignity and importance that belongs to them. Teachers should be prepared at teachers' colleges to assume their share of the health program; school nursing should be on a career level; the branch of public health that deals with school health and health education should be expected to furnish careers for an adequate number of trained physicians. The school should participate in community health education, and conversely, the community should interest itself in the health policies of its schools. Inside the school, the health council should be a representative body including students and parents, and this council should co-ordinate with the central school-health council and the community health council. From Editorial. The New England Journal of Medicine, March 7, 1946, p. 349.

HEALTH IMPLICATIONS OF THE PHYSICAL EDUCATION PROGRAM*

A Committee Report

Physical education contributes to health by its very essence because participation in joyous physical activity contributes to the normal growth and development of children and youth through increased strength, endurance, and organic vigor. Acquisition of skills usable in leisure time activities contribute, also, to the development and maintenance of mental health and emotional stability. However, to insure such benefits, certain policies must obtain in the conduct of physical education programs.

I. *General Health Policies in the Conduct of Physical Education Programs*

1. A pupil should be assigned to activities in accordance with his entering or subsequent medical examination. No activities should be prescribed or elected except as the physical status warrants.

2. All pupils should be enrolled in physical education classes; those who by reason of illness or disability are unable to participate in the more vigorous forms of activity should be assigned to classes in modified activity, or to rest, with full credit in either case. No pupil need be excused from physical education where such provisions are made. Assignment to modified programs of physical education, including corrective physical education, should be based on a physician's recommendation, and such programs should be supervised by the school medical advisor.

3. A pupil who is absent from school due to severe illness or injury should, before participation in class activities, present a statement from a regularly licensed physician which indicates that he is physically fit to participate in physical education activities.

4. All pupils who have been ill should be observed closely by the teachers for signs contraindicating participation in normal activities. (Convalescents, even those recovering from colds, should not be required to participate in strenuous activities.)

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* The Joint Committee on Health Problems in Education of the National Education Association and American Medical Association, at its 1945 meeting in Chicago, adopted the following statement and authorized its publication immediately upon receipt by any interested publication. Clippings or editorial comments will be appreciated by the Committee and may be sent to: Thurman B. Rice, M.D., Chairman, State Board of Health, Indianapolis 7, Indiana, or W. W. Bauer, M.D., Secretary, 535 North Dearborn Street, Chicago 10, Illinois.

II. *Special Policies for the Elementary School Physical Education Program.*

1. Pupils in the elementary school should have sufficient phyical activity (4-6 hours daily) to contribute to normal growth and development. Obviously this amount of activity cannot be scheduled within the school day proper. Therefore, a minimum of two thirty-minute periods, one in morning and one in the afternoon is recommended, one for instruction in physical education activities and one for supervised activity with an organization of the school day that will permit an adequate amount of free time for activity and play through the day.

2. The activities should be varied in nature and siutable to the needs, interest and physical condition of the pupils. Care should be taken in the selection of the activities to encourage voluntary participation according to the policy recommended above.

3. Pupils should be classified and grouped according to their abilities and health status. Both individual and sex differences must be taken into account.

4. To assist in the development of social adjustment and emotional stability, a number of these activities may be taught and engaged in on a co-educational basis.

III. *Special Policies for the Secondary School Physical Education Program.*

1. Students in secondary school should have sufficient physical activity (1-2 hours daily) to insure the maintenance of good health. The daily period of physical education should be of such duration as to allow students to have sufficient time to change to appropriate clothing, to have a minimum of thirty-minutes of activity and to take a shower. This recommendation assumes that the regular period of physical education instruction will be supplemented by an effective extra-class or intramural program involving all students in the school.

2. Students should be classified and grouped according to their health status.

3. The program for boys and girls should be differentiated, but there should be adequate opportunity for co-educational and co-recreational activities.

4. In the absence of accurate scientific data on the subject, girls should not be required to participate in vigorous activity during the menstrual period.

IV. *Policies for Interschool and Intramural Programs.*

1. Interschool athletic leagues should be confined to the senior

high schools; they have no place in the elementary or junior high schools. An extensive program of intramural activities is strongly recommended for both boys and girls in junior high school. Interschool activities for junior high school students should be limited to occasional invitational meets or games.

2. Junior high school boys should not compete in American football.

3. To protect the health of competing athletes, each athlete should have a medical examination at the beginning of the training season for each competing sport in which he participates and should be referred to the school medical advisor whenever he presents signs of abnormal health.

4. A school medical advisor should be present at all football games and should have authority to withdraw a pupil from a game whenever he believes such action is necessary.

5. The best obtainable protective equipment should be provided all contestants.

6. Games both in the interschool and intramural program should not be played in any sport until there has been ample time for conditioning and training in the fundamentals of the sport.

7. Competition should be between teams of comparable ability.

8. The number of games and contests in each sport should be limited and the length of practice sessions should be limited and specified in written policies.

9. Interscholastic boxing should not be permitted.

10. State championships should be discouraged and interstate competition limited to schools located near state borders.

11. Physical education teachers, with the aid of members of the school health staff, should see that injured athletes receive appropriate treatment either from their private physician or community clinics.

12. Indemnity insurance to cover the costs of such care should be carried by schools or athletic associations.

13. High school girls should not be permitted to participate in vigorous competitive activities during the early part of the menstrual period.

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EDITORIAL

Special attention is invited to the article, "School Health Service"—on page 108 of this issue. The article is a description and resumé of the new and *modern* school health law in Pennsylvania. It takes many steps in advance of most present laws and school health customs, some of which have not changed noticeably in forty years.

Although it does not subsidize any school district, it does finance the cost of the medical and dental examinations.

It broadens school health work to include all children of school age, whether attending public or private school, or confined to the home. It thereby becomes a community and state project rather than one of the public schools only. More than twenty years ago the city of Erie was probably the first municipality to finance school health examinations for parochial schools. There the City Council appropriated special funds outside the school budget for that purpose, turning them over to the Board of Education for administration.

This new law requires a physical examination of every child at least once every two years, in the odd numbered grades one to eleven, inclusive, the children to have clothing removed.

This will end the farce of attempting *annual* examinations whereby it was necessary because of lack of funds and resulting insufficient personnel, to make ten to forty examinations per hour in order to comply with the law and get everyone examined each

year. The vigor and tenacity with which some states and many communities cling to this antediluvian custom is astounding. The new law specifies not more than four per hour. It will also end the farce of attempting to diagnose heart and lung conditions through a shirt, waist, or other clothing. For the first time, parents who are intelligent enough to be present when their children are examined, are going to see slow, careful and scientific examinations, and under the demands of a state law.

Moreover, this law strengthens what was one of the weakest and most criticized factors in our efforts to control the spread of tuberculosis and, possibly, other communicable diseases,—it requires the physical examination of teachers and other school employees at least once every two years. A similar regulation in New York City has been upheld by the courts.*

The law authorizes special tests when needed, and at public expense. Often these are neglected because there has been no way to finance them.

Moreover, the selection of school health personnel in school districts of the first, second, and third class, is to rest in the jurisdiction of the local Board of School Directors, but the state has some check, since these selections must be confirmed by the Secretary of Health of the Commonwealth.

And, lastly—and this is particularly gratifying to one who still clings to the American ideal of "rugged individualism" and self-help—there is no provision for paying the costs of the follow-up, corrective program. This financing is left where it belongs—in the community and with the family.—*C. H. K.*

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ABSTRACTS AND NOTES

Heating and Ventilation of School Buildings.—After careful study by a statewide committee, the Division of School Buildings and Grounds, State Education Department, has released to architects and superintendents new regulations which must be complied with in order to obtain approval by the State Commissioner of Education of plans and specifications for heating and ventilation equipment for school buildings.

The regulations require that heating systems shall be so designed and guaranteed that when properly installed and operated they will meet the following standards for thermal environment during the heating season:

*Journal of School Health, March, 1946, page 85.

Type of Space	Design Operative Temperature[1]	Corresponding Room Air Temperature[2]
(a) Sedentary activity as for example in classrooms, auditoriums, offices, cafeterias	70°	68° - 72° (30″ above floor)
(b) Moderate activity, as for example in corridors, stairways, shops, laboratories, kitchens	68°	66° - 70° (60″ above floor)
(c) Vigorous activity, as for example in gymnasiums	65°	60° - 70° (60″ above floor)
(d) Special cases — lockers and shower rooms	78°	76° - 80° (60″ above floor)
Swimming pool area	83°	80° - 86° (60″ above floor)

[1] The operative temperature represents the mean effect of the temperature of the air of a room and of its walls. Under normal conditions walls and air exert approximately equal effects; but if a room has three cold exterior walls a higher air temperature will be necessary for comfort than in the case of a room with a single exterior wall exposed to the sun but not to the prevailing winds.

[2] The lower figure of air temperature in each case is for a room with relatively warm walls; the second figure, for a room with relatively cold walls.

Maximum air temperature gradient from floor to 60″ above floor shall not exceed 5° and preferably shall not exceed 3°.

Air movement in zones of occupancy shall not exceed 25 linear feet per minute.

Atmospheric Hazards and Quality

In classrooms, provision for air change shall be made which, in the judgment of the Department, will provide a minimum air change of 10 cubic feet per minute per occupant. For effective thermal operation in mild weather a design factor of 15 cfm. is desirable.

In rooms planned for close assembly a minimum air change of 10 cfm. per occupant shall be provided in order to remove odors. Additional air change, depending largely upon wall exposure, may be required for effective thermal operation in mild weather.

In rooms where there is danger of toxic substances occurring in large concentrations, or where odors are likely to be strong, or where overheating is likely to occur, special ventilating equipment adequate to relieve the situation and entirely independent of the ventilating system serving the rest of the building, shall be installed.

In a circular letter to architects and superintendents regarding these new regulations, Don L. Essex, director of the Division

of School Buildings and Grounds of the State Education Department, brings out the following points.

These regulations are performance standards. They give the Education Department wide discretionary powers in the approval of specifications for heating and ventilation. As a result any type of system which meets the prescribed standards can be approved.

Mechanical ventilation is no longer required. A properly designed system of ventilation with window supply and gravity exhaust can be given favorable consideration.

Except under unusual circumstances, no advantage is seen in exceeding the regulation on air change either by introducing more fresh air or by recirculation.

The new regulations make possible substantial economies in the design and operation of heating and ventilation equipment without sacrificing the health and comfort of the occupants of school buildings. Health News, New York State Dept. of Health, Feb. 4,

* * * * *

Physical Education Program,—Planned physical activities for elementary and primary departments offer great advantages to both children and teachers. How such a program was worked out in the Delmar School is described by David Green, writing in the *Delaware School Journal.*

Once it was decided that a worthwhile physical education program could be instituted at the elementary level, the formal classes were scheduled for twice a week, with a special teacher in charge. The most important development to come from these classes has been an intra-mural sports program, usually held at recess time, which gives the youngsters a chance to try out the skills and activities learned in class. This intramural program includes all the children, for, when school opens in September, captains are chosen who in turn select team members until every child has been named. The physical education instructor schedules games, and count is kept of the victories. Four elementary teachers usually help officiate throughout the year. At the end of the term, acknowledgment is made to the winning team in an assembly program.

The problem of youngsters in the halls during lunch time can be solved by these physical activities, writes Mr. Green. The gymnasium is utilized, with four games going at once. The children rotate from one to another, having fun, learning to use their muscles, and keeping out of mischief all at once.

Though such a plan is difficult to keep going because of age differences in the grades, it can be done successfully even without a special physical education teacher. An intramural director may

be appointed from among the elementary teachers to organize the program, and the teachers can take turns in supervising the games.

The results of this project at the Delmar School have been of decided value according to the teachers themselves. Among the advantages listed are:

1. Equal opportunity is provided for all.
2. Inhibitions and self-consciousness tend to be erased.
3. The social span of the child is widened.
4. Respect and tolerance is created for all members working together for the common good.
5. Sluggishness and inattentiveness in the classroom are less evident.
6. Awkwardness is eliminated.
7. Teachers and pupils are brought into a much needed wholesome relationship.
8. An atmosphere of real community living is created, where give and take is necessary, and where planning, and organization show the best results. School management, Feb., 1946.

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Scabies and Lice,—It is a strange commentary on human behavior that conditions which cause discomfort or disfigurement can arouse more excitement and a greater demand for action of some sort than conditions which are capable of producing lasting physical impairment or even death. In more than one community which has had a persistently high diphtheria rate for many years, and in which it has not been possible to awaken the interest of the citizens to the terrible cost in lives and in money of the consequences of neglected community action, the appearance of a few cases of ringworm of the scalp has resulted in a concerted and vehement demand upon public officials for immediate steps to eliminate the disease from the community. It is rather ironic that it is much easier and a good deal less expensive to free a community from diphtheria than it is to control ringworm of the scalp when it appears in epidemic form.

Scabies and lice, while highly uncomfortable to the individual, are of relatively little danger to life and cannot be considered a real threat to the community. Yet the presence of these infestations in a school room will bring a storm of protest from aroused parents who apparently fear the attendant discomforts far more than they do the threat of death from definitely preventable diseases. Every health worker has sometime or other wished that he could stimulate a community to approach the problem of smallpox

or diphtheria with only a fraction of the zeal for corrective action aroused by the presence of a few cases of head lice in the local school.

While pointing out the relative insignificance of scabies and lice, it is necessary, however, to stress that these conditions, too, require community effort for proper control. All too often it is one particular family that is the chronic offender, for unless the home environment of the affected child is cleaned up also, re-infestation readily takes place.

The recommended procedure for the control of scabies or lice calls for exclusion of the child from school until a physician's certificate stating that the child is free of the condition and can no longer transmit it to others is presented. If the parents are too ignorant or disinterested to obtain proper treatment for the child and to clean up the home so as to prevent re-infestation, then community action becomes necessary. This may take the form of recourse to the courts on the grounds that such parents are contributing to the delinquency of the child, but before such drastic steps are taken, an effort should be made by responsible community leaders to educate the delinquent parents and to help correct any economic conditions contributing to the situation. The presence of a family of this type is a far greater reflection on the community than it is on the affected children who are subjected to ignominy, ridicule and ostracism for conditions over which they have no control. A resentment against society, which may pay bitter dividends in the future, is often implanted in such children.

Full-time county health departments are not only helpful in the education of problem families but can also be of great service to the community by emphasizing repeatedly to *all* parents that by utilization of the well-accepted immunization procedures, their children can be protected against diseases which are more deadly than uncomfortable. Dr. Jerome J. Sievers, Chief, Division of Communicable Diseases, Illinois Health Messenger, Feb. 15, 1946, p. 13.

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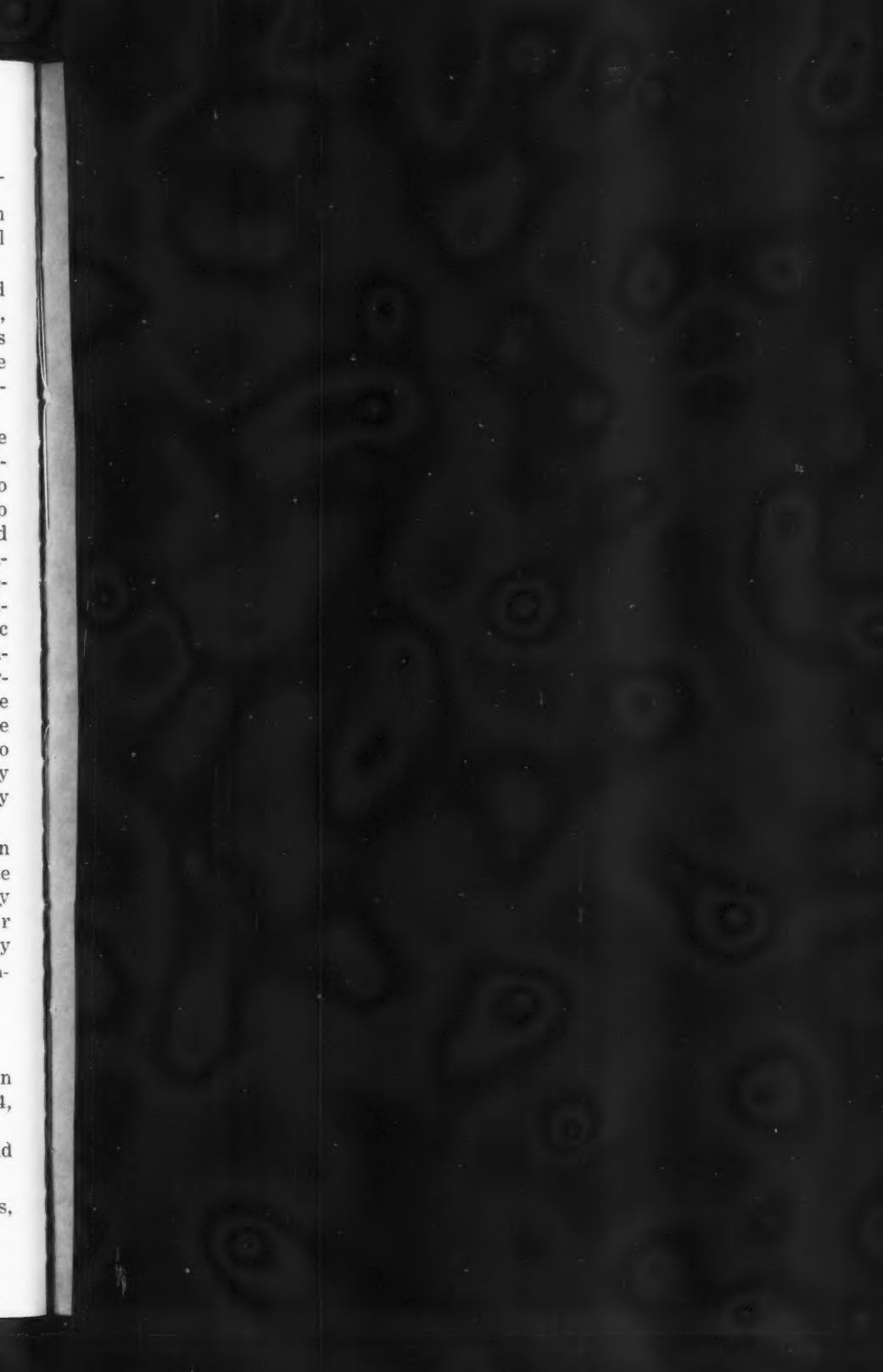
MEETINGS

The American School Health Association, with the American Public Health Association at Cleveland, Ohio, November 10 - 14, 1946.

The American Association for Health, Physical Education and Recreation, at St. Louis, Missouri, April 9 - 13, 1946.

The American Student Health Association, at Minneapolis, Minnesota, May 8 - 9, 1946.